Claims:

1. A heat exchanger comprising:

a core member defining at least two flow passages extending from a first end to a second end of the core member, the flow passages each having opposed first and second flow passage ends located at the first and second ends of the core member, respectively, the core member having first and second sides extending from the first end to the second end thereof, flow openings being provided through the first side in flow communication with the flow passages;

a first plate member sealing the flow passage ends at one end of the core member;

a second plate member secured to the first side of the core member and defining with the first side a flow path between the flow openings, wherein a fluid flowing through one of the at least two flow passages is circuited to the other of the at least two flow passages through the flow openings and the flow path.

2. The heat exchanger of claim 1 wherein the first plate member and the second plate member are integrally connected together, the second plate extending partially over the first side a predetermined distance from the one end of the core member.

3. The heat exchanger of claim 2 wherein the flow openings are located near the one end of the core member.

4. The heat exchanger of claim 2 wherein the second plate member includes a substantially planar portion secured to the first side, with a cross over recess defined by an outwardly projecting area formed in the planar portion defining the flow path.

5. The heat exchanger of claim 2 wherein the first plate member and the second plate member are substantially orthogonal to each other.

6. The heat exchanger of claim 1 wherein a plurality of spaced apart fins extend outward from the second side.

7. The heat exchanger of claim 6 wherein the fins run longitudinally from the first end to the second end of the core member and each have an outer end, the fins being divided along a longitudinal length thereof into successive fin sections, the outer ends of the fins in successive fin sections being angled in alternating directions.

8. The heat exchanger of claim 1 wherein the core member includes at least three of said flow passages each having opposed first and second flow passage ends located at the first and second ends of the core member, respectively, at least two spaced apart flow openings being provided through the first side of the core member in flow communication with each of said flow passages, including a further first plate member sealing at least some of the flow passage ends at the other end of the core member, and a further second plate member secured to the first side of the core member and defining a further flow path across the first side between further ones of the flow openings.

9. The heat exchanger of claim 1 wherein the core member is extruded and includes integral tubular walls located along the second side thereof defining the at least two flow passages.

10. A heat exchanger comprising:

an extruded core member defining a plurality of flow passages, each of the flow passages having opposed first and second flow passage ends located at first and second ends of the core member, respectively, the core member having first and second sides extending from the first end to the second end thereof, one of said first and second sides defining a first set of flow openings communicating with the flow

passages and one of said first and second sides defining a second set of flow openings communicating with the flow passages;

a first unitary end cap connected to the first end of the core member, the first end cap having a first member sealing the first flow passage ends of at least some of the flow passages, and a second member extending from the first member of the first end cap partially over the side of the core member defining the first set of flow openings , the second member of the first end cap defining with the core member at least one flow path between at least some of the first set of flow openings; and

a second unitary end cap connected to the second end of the core member, the second end cap having a first member sealing the second flow passage ends of at least some of the flow passages, and a second member extending from the first member of the second end cap partially over the side of the core member defining the second set of flow openings, the second member of the second end cap defining with the core member at least one flow path between at least some of the second set of flow openings.

11. The heat exchanger according to claim 12 wherein a plurality of spaced apart fins extend outward from the second side.

12. The heat exchanger according to claim 11 wherein the first set of flow openings and the second set of flow openings are each located on the first side of the core member.

13. The heat exchanger according to claim 11 wherein the spaced apart fins extend substantially parallel to a longitudinal axis of the core plate, and at least a portion of the core plate is curved about the longitudinal axis.

14. The heat exchanger according to claim 11 wherein the spaced apart fins extend substantially parallel to a longitudinal axis of the core plate, the core plate including first

and second longitudinal edge portions on opposite sides of a central portion thereof, the longitudinal edge portions being angled relative to the central portion.

15. The heat exchanger according to claim 11 wherein the core member includes a substantially planar core plate having a first surface defining the first side of the core member, the plate having an opposite facing second surface along which a plurality of annular wall sections extend from the first end to the second end, the annular wall sections each defining a respective one of the flow passages.

16. The heat exchanger of claim 11 wherein the core member includes first and second spaced apart plates integrally connected by spaced apart walls that divide an area between the first and second plates into the plurality of flow passages.

17. The heat exchanger of claim 16 wherein the flow passages each have a trapezoidal cross-section, and the first and second end caps define with the core member flow paths connecting alternating flow passages for circuiting a first fluid and a second fluid separately through adjacent flow passages.

18. The heat exchanger of claim 11 wherein the flow passages are defined at least partially within the fins.

19. The heat exchanger of claim 11 wherein a plurality of air flow openings are provided through the planar core plate.

20. The heat exchanger of claim 10 wherein the heat exchanger is a multi-fluid heat exchanger, the first and second end caps defining with the core member the flow paths for connecting alternating flow passages for circuiting a first fluid and a second fluid separately through adjacent flow passages.

21. The heat exchanger according to claim 10 wherein the flow passages include first and last flow passages and a plurality of intermediate flow passages located therebetween, the heat exchanger including an inlet fitting mounted to the core member for providing a fluid to the first flow passage and an outlet fitting mounted to the core member for receiving the fluid from the last flow passage, the first and second end caps being configured to circuit the fluid from the first flow passage, through the intermediate flow passages, and then into the last flow passage.

22. The heat exchanger of claim 21 wherein the first and second end caps and the core member define the flow paths for circuiting the fluid serially through the intermediate flow passages.

23. The heat exchanger of claim 21 wherein the first and second end caps and the core member define the flow paths for circuiting the fluid in a parallel flow through at least some of the intermediate flow passages.

24. The heat exchanger of claim 21 wherein the first and last flow passages each have a larger cross-sectional flow area than the intermediate flow passages, the inlet fitting being secured to an end of the first flow passage and the outlet fitting being secured to an end of the last flow passage.

25. The heat exchanger of claim 24 wherein internally extending fins are defined by the core in each of the intermediate flow passages but not in the first and last flow passages.

26. The heat exchanger of claim 21 wherein at least one of the first member of the first end cap and the first member of the second end cap includes a fitting mounting portion that extends over the end of at least one of the first flow passage and the last

flow passage, the fitting mounting portion defining an opening in alignment with the at least one of the first flow passage and the last flow passage, one of the fittings being brazed to the fitting mounting portion in flow cooperation with the at least one of the first flow passage and the last flow passage.

27. The heat exchanger of claim 10 wherein the first set of flow openings are located near the first end of the core member and the second set of flow openings are located near the second end of the core member.

28. The heat exchanger of claim 10 wherein the second members are substantially planar, the flow paths being defined by raised areas provide therein.

29. A method of forming a heat exchanger, including steps of:

providing an extruded core member defining a plurality of spaced apart flow passages, each of the flow passages having opposed first and second flow passage ends located at first and second ends of the core member, respectively, the core member having first and second sides extending from the first end to the second end thereof, one of said first and second sides defining a first set of flow openings communicating with the flow passages and one of said first and second sides defining a second set of flow openings communicating with the flow passages;

providing a first unitary end cap and mounting the first end cap to the first end of the core member, the first end cap having a first member sealing the first flow passage ends of at least some of the flow passages, and a second member extending from the first member of the first end cap partially over the side of the core member defining the first set of flow openings, the second member of the first end cap and the core member defining at least one flow path between at least some of the first set of flow openings; and

providing a second unitary end cap and mounting the second end cap to the second end of the core member, the second end cap having a first member sealing the

second flow passage ends of at least some of the flow passages, and a second member extending from the first member of the second end cap partially over the side of the core member, the second member of the second end cap and the core member defining the second set of flow openings and defining at least one flow path between at least some of the second set of flow openings.

30. The method of claim 29 wherein the core member is provided with a plurality of elongate fins extending from the first end to the second end of the core member, including steps of dividing outer ends of the fins into successive fin sections by applying spaced apart cuts across the outer ends, and bending the outer ends of the successive fin sections in alternating directions.

31. The method of claim 30 further including rounding corner edges of the outer ends at the spaced apart cuts.

32. A core plate for a heat exchanger, the core plate defining a plurality of outwardly extending longitudinal fins running from a first end to a second end of the core plate, the fins having outer fin ends divided into separate sections with the outer fin ends of adjacent sections being bent in different directions.